



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,111	09/19/2006	Hermann Randecker	304-848 (172346)	4133
30448	7590	11/25/2009		
AKERMAN SENTERFITT P.O. BOX 3188 WEST PALM BEACH, FL 33402-3188			EXAMINER HOWELL, DANIEL W	
			ART UNIT 3726	PAPER NUMBER
			NOTIFICATION DATE 11/25/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip@akerman.com

Office Action Summary	Application No. 10/552,111	Applicant(s) RANDECKER ET AL.	
	Examiner Daniel W. Howell	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 20-22, 24, 25 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 is/are allowed.
- 6) ☒ Claim(s) 1-18, 20-22, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3726

1. Claims 1-18, 21, and 24-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There are two distinct issues in this rejection. Claims 1 and 15 have been amended to set forth “a *curvature of the chip former is/being relatively small* at the cutting edge and increases/increasing with increasing distance from the cutting edge.” Applicant has pointed to paragraph [0017] of the specification for basis for this limitation. Paragraph [017] sets forth a chip guide surface “**not to be curved** and instead to be in the form of a sloping surface with a uniform, positive tool face or tangent angle.” For the first issue of this rejection, the newly aimed claim limitation regarding the “relatively small curvature” is not in agreement with paragraph [017], which explicitly states that the chip guide surface is “not to be curved.” Thus, the newly added limitation to claims 1 and 15 does not have support in the specification as originally filed, and it constitutes **new matter**. For the second issue of this rejection, the newly added limitation to claims 1 and 15 sets forth an initial curvature and then a curvature that “increases with increasing distance from the cutting edge.” No part of the specification appears to disclose that the chip former has more than one radius of curvature. Thus the concept that the chip former has a shape with more than one radius of curvature does not have basis in the specification as originally filed, and the newly added limitation to claims 1 and 15 constitutes **new matter**.

2. Given the situation where new matter is added to a claim, it is Office policy to apply art to the new matter limitation if that subject matter is appropriately shown and taught by the prior

Art Unit: 3726

art. However, the examination process sometimes gets awkward over the next several Office actions while the claim gets amended to address the new matter situation. If claim 1 as it presently exists were presented in a brand new, never seen, never examined application, then the examiner would likely simply just apply German '718 in view of Mackey against the first two independent claims. However, in order to make it clear that the examiner still believes the rejection of the prior Office action to be appropriate and correct, the rejection below will be made with German '718 in view of Nuzzi '681 and Mackey '381.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18, 20-22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over German 3314718 in view of Nuzzi et al (6135681) and Mackey (3199381). Figures 2a and 2b of German '718 show a single-lip gun drill having a cutting edge 40 and an adjacent face 38 that leads to steps 41, the face 38 and step 41 cooperating to break the chips. All of the structure in figures 1 and 2 is integral, and the face 38 and the clearance face form a cutting wedge. The German reference does not appear to give explicit details about the face 38. Nuzzi et al shows a cutting edge 64 and an adjacent U-shaped groove 75 for forming a positive rake angle 80. See column 6, lines 40-51, and figure 8. The positive rake angle 80 helps form the chips, and the U-shaped groove aids in breaking the chips. As disclosed at column 7, lines 19-29, the tool may be coated with suitable coatings, including TiAlN. Lines 30-40 of column 6 and column 7, lines 19-22 of column 7, discuss manufacture of the insert from a blank by machining the surfaces,

Art Unit: 3726

and column 7, lines 23+ state, “These base materials **can then be coated with hard coating materials....**” The words “can then be coated” clearly indicate that the cutter is coated **after machining of the cutting surfaces**. Note that Nuzzi et al also states that various combinations of these or other coatings can be used to accommodate numerous applications. It is considered to have been obvious to have provided German ‘718 with the U-shaped groove having a positive rake angle as taught by Nuzzi et al in order to greatly facilitate chip formation and breakage (column 6, line 43, Nuzzi et al) and dependent upon variables such as the material being machined and the dimensions of the hole, and to provide German ‘718 with the coating and layers of coatings of Nuzzi et al in order to provide hardness and edge retention qualities. Additionally, it is considered to have been obvious to have provided German ‘718 with the U-shaped groove as shown by Nuzzi et al as this is a simple substitution of one known element/cutting edge for another in order to obtain a predictable result of cutting a hole in a workpiece. Claims 1 and 15 have been amended to add a limitation that has been addressed above as new matter. Mackey ‘381 has been applied to show the curvature of the chip former. As seen from figures 2, 4, and 5, the U-shaped slot 21, 22, starts near the cutting edge and has a first area of a “relatively small curvature,” and as the slot goes axially rearward, the curvature of the surface increases. As discussed at column 2, lines 43-55, “a minimum amount of power is required in cutting, **and the chips are broken up in small chunks so as to pass out the hole being drilled without packing or binding.**” Note that Mackey confirms that slots such as **the one of Nuzzi et al may be used to break the chips if so desired.** It is considered to have been obvious to have provided the German device with such a shaped slot in order to appropriately break the chips such that they easily are removed from the drilling region.

Art Unit: 3726

Regarding claim 16, it is considered to have been obvious to have provided the coating after resharpener or regrinding, as those operations would otherwise remove the coating. While the angle 80 as shown in figure 8 may be measured as being about 16 degrees, and the chip break surface of Nuzzi et al is a certain distance from the cutting edge, it has been held that patent drawings are not to be taken as drawn to scale unless the reference states that it is to scale. It is considered to have been obvious to have experimented with various rake angles and distances and to have provided a value of between 10 and 30 or 15 and 25 degrees, and to have provided a distance of between .3 and .6 mm, depending on the particular characteristics of the material being drilled.

5. Claim 27 is allowed.

6. Applicant's arguments filed 7-31-09 have been fully considered but they are not persuasive. At the paragraph bridging pages 9 and 10 of the response, Applicant has pointed to figure 5 and stated that "it can be seen that the radius of curvature of the chip former is relatively large (weak curvature) directly adjacent to the cutting edge and decreases with increasing distance from the cutting edge (curvature gets stronger as the distance increases.)" It is noted that no portion of the specification discusses relatively large or small radii of curvature. The specification does not appear to have any comment on this topic at all. Further, no portion of the specification states that the drawings are drawn to scale. While paragraphs [043-044] discuss tangents to the curved surface, nothing in this discussion discloses a plurality of radii of curvature. Note that the "rake angles" represented by the various gamma angles of pages 12-13 are not indicative of variable radii of curvature; they simply represent a varying rake angle. Applicant has stated on page 10 of the argument that the flat surface corresponds to "an infinite

Art Unit: 3726

radius of curvature.” Applicant has then taken a leap of interpretation with that to justify claiming plural radii of curvature. As stated in the rejection above, paragraph [017] explicitly states that the surface is “not to be curved.” Applicant simply does not have disclosure of more than one radius of curvature in the specification as originally filed, and the new limitation to claims 1 and 15 constitutes new matter. Note that Mackey has been applied to show the new limitation of claims 1 and 15. On page 12 of the arguments, Applicant has discussed *breakage of the chips*. Turning for a moment to the claims, it is noted that claims 1 and 15 merely set forth a “chip former.” Nothing in claims 1, 2, 6-18, 20-22, 24 or 25 is directed to a “chip breaker” either. The only claims directed to breakage are *dependent claims 3, 4, and 5 and independent claim 27*. Nevertheless, it is well known by those skilled in the art that slots as shown by Nuzzi et al may be used to break chips, and lines 43-55 of column 2 of Mackey explicitly discuss such chip breakage. It is noted that Applicant has discussed notches/breakers 82 of Nuzzi et al, but the Office action has not relied upon those features to meet the chip breaking/forming limitations of the claims.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3726

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning the content of this communication from the examiner should be directed to Daniel Howell, whose telephone number is 571-272-4478. The examiner's office hours are typically about 10 am until 6:30 pm, Monday through Friday. The examiner's supervisor, David Bryant, may be reached at 571-272-4526.

In order to reduce pendency and avoid potential delays, Group 3720 is encouraging FAXing of responses to Office actions directly into the Group at FAX number to 571-273-8300. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Daniel Howell of Art Unit 3726 at the top of your cover sheet.

/Daniel W. Howell/

Primary Examiner, Art Unit 3726